

Deutscher Mustererkennungspreis 2012

Laudatio für Dr. Christian Theobalt

The German Pattern Recognition Prize 2012 is awarded to Christian Theobalt in recognition of his outstanding and groundbreaking scientific work in the area of **3D reconstruction of static and dynamic scenes** from camera images. His work has helped to define the field of marker-less motion and performance capture. The following milestone results exemplify this achievement.

In his dissertation Christian Theobalt presented a model-based marker-less motion capture and dynamic texture estimation approach, that enables high-quality reconstruction and rendering of free-viewpoint videos of human actors. The respective SIGGRAPH paper has become a classic reference in the field.

In 2008, he has broken new ground by developing one of the first approaches in the literature to capture detailed models of the dynamic geometry of humans in general apparel from multi-view video. The algorithm uses new surface- and volume-based deformation techniques in conjunction with analysis-by-synthesis estimation. Without markers in the scene, it reconstructs detailed geometry and textural surface appearance of actors that perform complex and rapid moves, and it can even capture people wearing wide apparel, such as a skirt or a dress.

Since then, he has made numerous additional contributions to this area which have paved the trail to dynamic scene reconstruction at unprecedented accuracy and robustness. Aside from his main line of research, he has recently also published important work in the emerging field of depth camera imaging, as well as the area of advanced video processing. Christian Theobalt has done fundamental work on challenging research problems that lie on the boundary between computer vision and computer graphics. His insights are highly influential and recognized in both communities alike. His work stands out through its important theoretical insights, as well as its high practical relevance.

Please join me to welcome Christian Theobalt for his award lecture.